

**REMARKS**

Claims 1-4, 6-8, 11-19, 26, and 27 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Bamdad in view of Backhaus et al. The rejection is based on the position of the Examiner that Bamdad teaches a homogenous surface modification layer. As is demonstrated below, Bamdad in fact fails to teach or suggest a homogenous surface modification layer, and in fact teaches away from a homogenous surface modification layer.

The modification layer disclosed in Bamdad is not homogenous. The Bamdad modification layer is not homogenous because it is made up of two different self-assembling molecules or SAMS mixed together. Specifically, Bamdad teaches a layer made up of first and second self assembling molecules that are mixed together and form a monolayer. For example, Col. 3, lines 47 to 63 state:

According to this aspect a self-assembled mixed monolayer, formed of a **first species** and a **second species**, is adhered to the surface. The first species has a formula  $X-R-Ch-M-BP$ , where X, R, Ch, M, and BP are each selected such that X represents a functional group that adheres to the surface, R represents a spacer moiety that promotes self-assembly of the mixed monolayer, Ch represents a chelating agent that coordinates a metal ion, M represents a metal ion, and BP represents a binding partner of the biological molecule. The binding partner is coordinated to the metal ion. The second species is selected to form a **mixed, self-assembled monolayer** with the first species, and according to a preferred aspect the second species has a formula,  $X-R-O-(CH_2 CH_2 -O)_n -H$ , in which X represents a functional group that adheres to the surface, R represents a spacer moiety that promotes formation of a self-assembled monolayer of a plurality of the molecules, and n is from one to ten.

See also Figure 18 which provides a representation of Bamdad's surface modification layers that are mixed SAM layers.

Because Bamdad teaches SAM layers that are mixtures of first and second SAMs, Bamdad fails to teach or suggest a homogenous surface modification layer. Bamdad's mixed SAM layer is not homogenous because it is not made up of a single type of SAM.

Since Backhaus has been cited solely for additional elements appearing in various of the claims of this rejected set, e.g., the proposition that it would be obvious to substitute a sulfonate moiety onto Bamdad's SAMs, this reference fails to provide any motivation for one to modify Bamdad contrary to Bamdad's teaching to have a homogenous surface modification layer.

As such, Claims 1-4, 6-8, 11-19, 26, and 27 are not obvious under 35 U.S.C. §103(a) over Bamdad in view of Backhaus et al. and this rejection may be withdrawn.

Finally, Claims 5, 9, 10 and 20 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Bamdad in view of Backhaus and further in view of McAleer et al. , for the asserted reason that Bamdad teaches all of the elements of the claimed invention but for the specific nature of the reagents, e.g., glucose oxidase, which element is made up by the supplemental Backhaus and McAleer references.

However, as explained above, Bamdad fails to teach or suggest, and in fact teaches away from, a homogenous surface modification layer, which is a named element of the present pending claims. Because the supplemental Backhaus and McAleer references have been cited solely for their teachings of specific reagents, they fail to make up this fundamental deficiency in Bamdad.

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Accordingly, Claims 5, 9, 10 and 20 are not obvious under 35 U.S.C.  
§103(a) over Bamdad in view of Backhaus and further in view of McAleer et al.  
and this rejection may be withdrawn.

**CONCLUSION**

Applicant submits that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone the undersigned at the number provided.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-0815, order number LIFE004.

Respectfully submitted,  
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Date: 4.28.03

By: \_\_\_\_\_

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